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A Clinical Study of the Mouth in Untreated Lepromatous Patients

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The mouth in 40 consecutive, unselected bacilliferous leprosy patients has been examined. The frequency and various types of lesion are reported. Twenty-three patients showed lesions inside the mouth. Although all parts of the mouth were found to be affected in a varying percentage of patients, the hard palate was involved in all 23 patients. Further, of these 23 patients, 21 showed acid-fast bacilli on the surface of mouth as judged by surface smears and mouthwash. A review of the literature concerning oral lesions in lepromatous leprosy is also presented.

Introduction

Cutaneous manifestations of leprosy are well known. However, detailed descriptions of oral lesions of the disease are lacking in most of the standard text-books. This is possibly on account of the fact that only a few studies primarily dealing with mouth involvement have been published in the past. In recent years, some work has been reported (Lighterman *et al.*, 1962; Epker and Via, 1969; Reichart, 1974, 1976). Other recent publications are either in Japanese or in German and a few have appeared in the *Journal of Oral Surgery*. As such, none of the reports have found an entry into the text books on leprosy, and the subject has not been reviewed in the leprosy journals.

The present work has therefore been undertaken to report on the frequency and type of lesions occurring in the mouths of untreated lepromatous patients from North India and also to review the literature on the oral manifestations of leprosy.

Material and Methods

The study comprised of 40 consecutive, mainly untreated, multibacillated patients examined by the authors at Central JALMA Institute for Leprosy, Agra. Thirty-seven of these had lepromatous leprosy, while the remaining 3 had borderline (BL) type of leprosy. Five cases had just started their treatment. Four had received DDS for 3 days to 4 weeks and the fifth patient had taken the drug (DDS 100 mg daily) for 7 weeks only. On account of the very brief duration of treatment, these cases were included in the study.

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A detailed history of the disease was obtained and complete clinical examination done in each case. The mouth was subjected to a thorough examination and details recorded on a proforma prepared for the study. Teeth were not included in the present work.

Surface smears from 3 sites in the mouth (tongue, palate and gums) were examined in all cases for acid-fast bacilli (AFB). Mouthwash for enumeration of AFB was also obtained in each case. The techniques of surface smears and mouthwashes are described elsewhere in this issue of *Leprosy Review*.

Results

As already mentioned all but 5 of the patients were untreated and were picked up consecutively as they reported to the out-patient department. There was thus no selection of the cases. Twelve patients had disease for less than 3 years, while there were 23 who had the disease for 3 to 10 years and 5 for more than 10 years (Table 1). It is seen from the table that 4 out of the 12 cases (33.3%) with disease of less than 3 years duration had lesions inside the mouth. On the other hand 15 out of the 23 patients (65.2%) in the group of 3 to 10 years duration and 4 out of 5 patients (80%) with disease of more than 10 years duration had clinical involvement inside the mouth. In all, 23 patients (57.5%) had lesions of the oral mucosa. Various clinical lesions, as observed in different parts of the mouth are described.

PALATE

This was the most commonly affected site inside the mouth and all the 23 patients (57.52%) who had involvement of the oral mucosa, had lesions on the palate. The midline of hard palate bore the brunt of the disease, being involved in all the 23 cases. Twelve of these cases showed in addition, involvement of the soft palate while in 10 cases the uvula was also affected. None of the patients had lesions of the soft palate or the uvula without the hard palate being also involved.

Lepromatous lesions in the form of multiple papules and nodules were seen in 10 cases over the hard palate (Fig. 1). Three cases had solitary nodules. The nodules were moderate in size. Five patients had plaques over the hard palate (Fig. 2) with superficial erosion in 2 of them. One patient had diffuse infiltration with obliteration of the mucosal folds of palate. Extensive scarring in 2 patients and superficial ulceration in another 2 patients were also seen.

Seven patients showed papulo-nodular lesions over the soft palate. One had diffuse thickening and 2 others had erosions. Five of the above patients also had scarring — 2 with extensive fibrosis had problems of phonation, 3 with slight atrophy.

In the present study no case of perforation of the palate was seen. However, perforation of the palate is quite often seen in lepromatous leprosy. Figure 3 illustrates a large perforation in the hard palate of a case of lepromatous leprosy not included in the present study.

TABLE 1

Frequency of oral lesions in lepromatous leprosy

Duration of illness	Total no. of patients	No. of patients showing lesions inside the mouth	No. of patients showing lesions on palate		No. of patients with uvula affection	No. of patients with tonsillar pillar/or post-pharyngeal wall lesions	No. of patients with gum affection	No. of patients with buccal involvement	No. of patients showing tongue lesions	No. of patients with lesions +ve for AFB
			Hard	Soft						
1	2	3	4	5	6	7	8	9	10	11
0–3 years	12	4	4	3	2	2	2	0	1	5
4–10 years	23	15	15	6	4	8	8	2	6	13
More than 10 years	5	4	4	3	3	2	3	1	3	3
Total	40	23	23	12	9	12	13	3	10	21

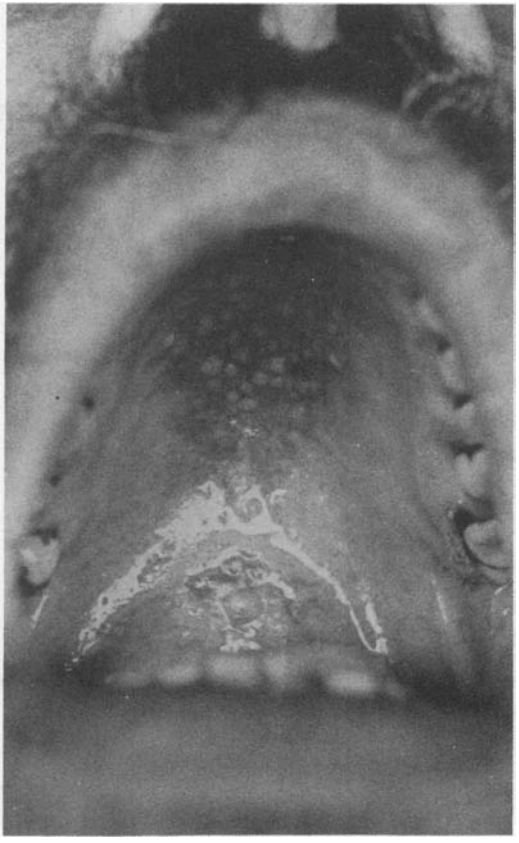

Fig. 1. Papules on the hard palate.

UVULA

As mentioned earlier, the uvula was involved in 10 cases. There was complete destruction of the uvula in 3 cases and scarring with partial loss in 4 patients. Two patients had nodules over the uvula. One patient showed an ulcer.

TONSILLAR PILLARS AND POSTERIOR PHARYNGEAL WALL

Twelve patients had lesions of tonsillar pillars. Papules and nodules were seen on the tonsillar pillars in 5 cases (Fig. 4). One of these patients had mild scarring of tonsillar pillars as well. Two patients showed shallow ulcers. Gross scarring was observed in 4 patients. One had diffuse thickening of the pillars. It was mainly the anterior pillar which was affected.

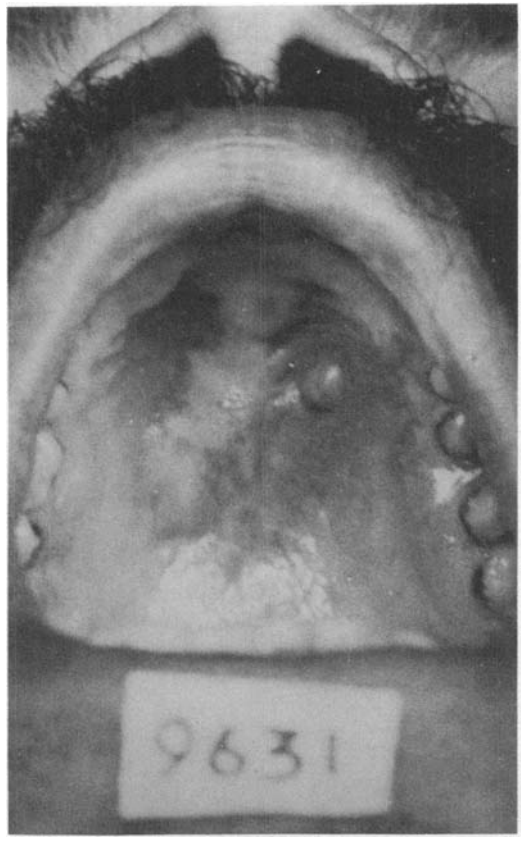

Fig. 2. Plaque on the hard palate.

Posterior pharyngeal wall was involved in 3 cases and appeared irregular with small pin-head sized papules. One patient had excessive dryness of the posterior pharyngeal wall.

GUMS

Thirteen patients showed gum lesions in one or the other form. Inner gums of the upper jaw were involved in 9 cases and in all these cases the lesions appeared to be in continuity with those of lesions on the hard palate. The lesions were in the form of papules and nodules. Four patients had no involvement of the adjoining area of the hard palate. Three of these 4 had swelling and infiltration and the remaining one had retraction of the gums.

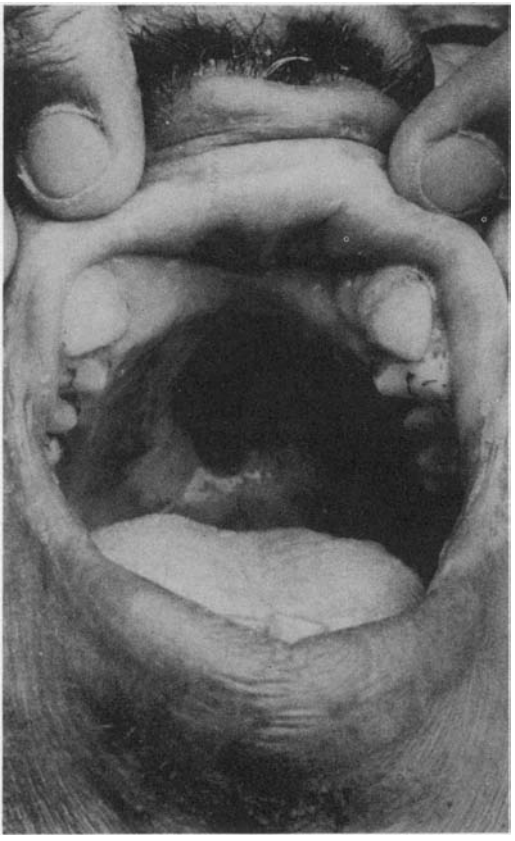

Fig. 3. Perforation hard palate (patient not from the present series).

BUCCAL MUCOSA

Only 3 patients showed lesions over the buccal mucosa. In 2 of these, there were discrete, moderate-sized papulo-nodular lesions predominantly over the line of contact of teeth. The third patient had hyperemia but no other lesions.

TONGUE

Gross lesions of the tongue were seen in 10 of the 40 cases. Two had very extensive lesions consisting of multiple big nodules giving a cobble-stone appearance (Figs 5 and 6). In 2 other patients there were a few nodules and 2 patients had solitary nodules on the tip of the tongue (Fig. 7). One had diffuse thickening of the tongue while another had marked scarring. The remaining 2 had shallow longitudinal fissures.

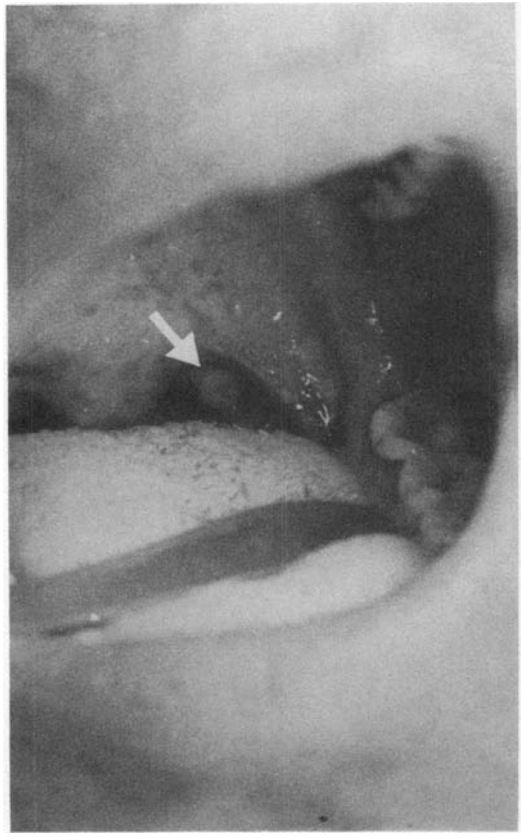

Fig. 4. Nodule on the left posterior tonsillar pillar.

Fissures of the tongue were a striking finding in lepromatous patients. Fissures of varying depths were seen in 6 cases. Four had shallow fissures while 2 had deep fissures. In all cases tongue involvement was limited to the dorsal surface and anterior two-thirds only. In no case was the ventral surface of the tongue and floor of the mouth affected.

Bacteriological examination of the mouth showed that in 21 of the 23 patients with oral lesions, AFB were seen in either the smears prepared from the surface of lesions or in the mouthwash specimens.

Discussion

Lepromatous leprosy is known to result in a variety of clinical manifestations in the oral mucosa. The lesions inside the mouth develop insidiously and in most patients there are no attributable symptoms. However,

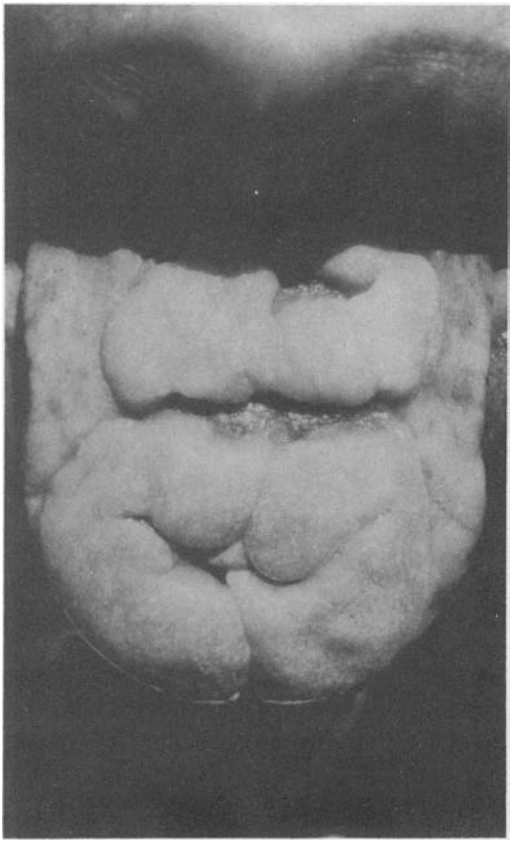

Fig. 5. Big nodules on the dorsum of tongue.

when there is fibrosis and shrinkage of the soft palate or perforation of the hard palate, the condition may become symptomatic with problems of phonation and nasal regurgitation of food.

The sequence of changes, as it occurs in oral mucosa in lepromatous patients, is well described by Pinkerton (1932, 1954) who lists the stages as congestion, infiltration, nodule formation, possible ulceration, atrophy and scarring. A similar sequence of events has been described by Job *et al.* (1966) in nasal mucosa which appears to be affected earlier than the oral mucosa (Bertelli and Sacheri, 1961).

Oral involvement has been reported to occur in 19% (Bechelli and Berti, 1939) to 60% (Lighterman *et al.*, 1962) of lepromatous leprosy patients. Although all the structures inside the mouth can become involved, the premaxillary gingiva, hard and soft palate, uvula and tongue have been shown to be more commonly affected (Prejean, 1930, 1936, 1943; Lighterman *et al.*,

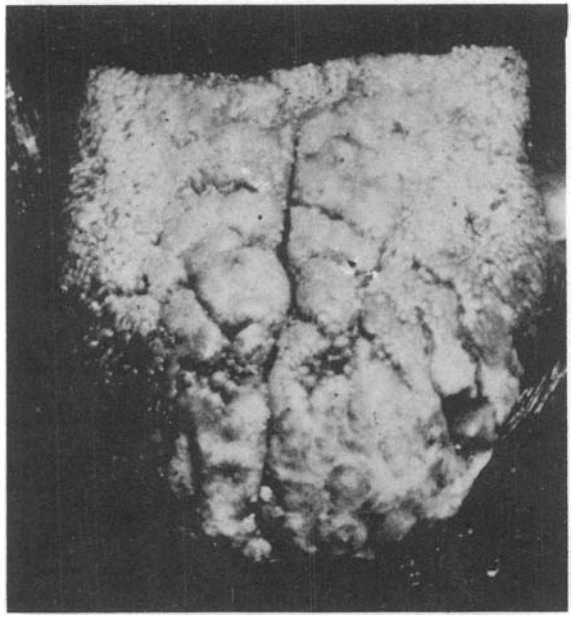

Fig. 6. Multiple nodules with fissures on the tongue.

1962; Reichart, 1976). In Itakura's series (1940), the hard palate was involved in 53.5% of patients examined. Lighterman *et al.* (1962), quoting Serra, have reported that nodules on the soft palate were observed in 48% of cases and uvula affection was seen in 20% of cases. Hikada (1958), on the other hand, found that 42.2% of his patients had late changes affecting the uvula. Tongue lesions, which appear to be less common than those of the palate, have been reported to occur in 17.3% of cases by Lighterman *et al.* (1962) and in 29.5% of cases by Mathis (1955).

In the present series, which comprised 40 unselected patients, intra-oral lesions were seen in 57.5% of cases. Frequency of oral lesions, as recorded in Table 1, appeared to increase with the duration of illness. The hard palate was the most commonly affected site and was involved in all 23 patients. The midline of the hard palate was the site of predilection. The possible cause of its greater involvement may be its relatively low temperature, because as a separating media between the nasal and oral cavities, it is constantly exposed to a cooling air stream on both its surfaces. The frequency of palate affection in the present series is higher than in those of Itakura (1940) and Hikada (1958). Involvement of the soft palate and the uvula was a less common finding, as observed by Serra (quoted by Lighterman *et al.*, 1962).

Gum involvement was next in frequency to the palate and in a majority of patients gum lesions were seen as an extension of those of the palate. Buccal mucosa appeared to be rarely involved. Occurrence of lesions over the anterior

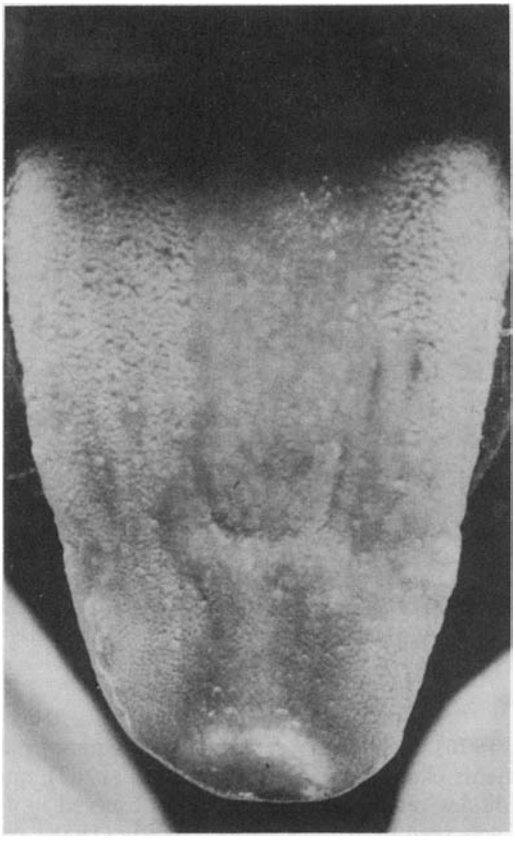

Fig. 7. Solitary nodule on the tip of the tongue.

tonsillar pillar as also occasional involvement of the posterior pharyngeal wall were rather unexpected observations. The tonsillar pillars seemed to be more often involved with gross lesions or scarring of the soft palate and uvula.

Tongue involvement, in the present study, was seen in 25% of cases. These findings are very similar to those of Lighterman *et al.* (1962) and Mathis (1955). An additional finding in the present study, is the occurrence of fissures on the tongue which, to the best of our knowledge, has not been reported in the literature.

The present study indicates that involvement of oral mucosa is quite significant in lepromatous leprosy. These lesions could be the source of discharge of bacilli into the mouth as 21 of 23 patients with clinical lesions in the mouth showed bacilli on the surface. The epidemiological significance of this feature is obvious particularly in communities where spitting is common. It is important that the mouth should be carefully examined in all lepromatous cases and that patients should be educated in oral hygiene.

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